

## ROHM AND HAAS COMPANY

Bristol, Pa., May 17, 1968

25

ENGINEERING DIVISION



COMPANY CONFIDENTIAL

CC: Mr. Klein Mr. Paist  
Mr. Asay Mr. Parker  
Dr. Butterbaugh Mr. Rarig  
Mr. Edwards Mr. Sawyer  
Mr. Geniesse Mr. Trout (3)  
Mr. Iezzi

REPORT: R. L. DeWitt

SUBJECT: Expansion of Well Water Treatment Operation at Whitmoyer Laboratories

Certain additions to the method of treatment covered in the \$72,000 project described in the report of May 2, 1968 could be advantageous.

The \$72,000 project was based on the use of the existing lagoons to presettle the arsenic precipitate prior to a final polishing by a plate-and-frame filter before creek discharge. The partial replenishing of the underground water table via these earth-bottom lagoons imposes an added burden on the "mining" of these waters which could be obviated by filtering up to 240 gpm continuously, without presettling, in a rotary vacuum filter with all of its necessary satellite equipment. Housing this filter and its adjunct equipment would require a temporary structure. Before sizing the structure, we learned from Mr. Trout that he would like to use the Building 9 area now housing the equipment processing 50 gpm from the existing wells as garage space. The proposed 50' x 40' building would house not only the rotary vacuum filtering equipment, but would be large enough to house the two 6500 gallon reactors and charging facilities which, in the project costing \$72,000, would have replaced the smaller reactors in one corner of Building 9.

In addition to the changed filtration facilities, improved safety measures have been incorporated. An impervious lagoon, capable of holding a full day's run, would be used for diverting the flow away from the Tulpehocken Creek in the event of an equipment or operating failure anywhere in the system. Also, the Tulpehocken would be monitored downstream from the Whitmoyer plant and the monitor would provide a source of automatic signaling and flow diversion when arsenic levels rose to unsafe limits.

Sludge handling, which was not a part of the \$72,000 project, is included in the expanded project. The sludge would be accumulated at the plant site in a covered impervious basin.

These additions to the project are very roughly estimated to cost \$229,000. When added to the \$72,000 project, and making an allowance for the replacement of the filtering system envisioned by that project, the total cost for handling

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the arsenical water is \$290,000. The details are shown below:

EXPANSION ITEMS FOR WELL WATER FACILITY  
Whitmoyer Laboratories, Myerstown, Pa.

Installation of rotary vacuum filtration equipment	\$ 131,000
Construction of a 50' x 40' treatment and filtration building	38,000
Construction of an impervious basin to catch plant discharges during periods of mal-operation	25,000
Installation of stream protection instrumentation	14,000
Installation of sludge handling equipment	21,000
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	\$ 229,000
Installation of water treatment equipment (Estimate of \$72,000 in R.L. DeWitt's Report of 5/2/68 less \$12,000 for removing plate-and-frame filter press associated with that project)	   \$ 60,000
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Estimate for total installation	\$ 289,000
Round off to	\$ 290,000

Details of the monthly processing cost estimate of \$23,185 at a 210 gpm rate and \$20,555 at a 150 gpm rate are given on the attached sheets.

The single line diagrams, the processing methods, and the safety procedures involved in the above project were discussed with Mr. Iezzi on May 17, 1968.

  
R. L. DeWitt

RLD/dmr  
Attach.

AR100135



FORM 1005	ENGINEERING DIVISION		No.
	PROCESSING <u>COST ESTIMATE</u>		Page <u>1 of 1</u> Issued <u>5-17-68</u> Revised _____

PLANT: Whitmeyer Labs., Inc., Myerstown, Pa.  
PRODUCT: Waste Well Water

DATE: 5-17-68 By: RLD

# PROCESS: Well Water Treatment and Filtration

PRODUCTION RATE: 6,480,000 gal/mo (150 gpm feed)

MRN/SHIFT 2 SHIRTS/DAY 3 DAYS/MONTH 30

\* 1 day man (9 total)

MATERIALS	LB. USAGE PER M Gal.	LB. QUANTITY/Mo.	UNIT COST/ Ton	COST / Mo.	COST PER M Gal.
Ferric Sulfate	25.00	162,000	\$ 38.85	\$ 4760	\$ 0.738
Lime	11.50	74,500	21.50	800	0.124
			MATERIAL OVERHT.:9 .....		
			TOTAL MATERIAL	\$ 5560	\$ 0.862

UTILITIES SUMMARY			
UTILITY	USAGE PER MO.	UNIT COST	COST
ELECTRIC POWER	557 CKWH	\$ 1.01	\$ 564
PROCESS WATER	.		
COOLING WATER			
TREATED WATER			
NATURAL GAS			
REFRIGERATION			
INSTRUMENT AIR			10
INERT GAS			
WASTE TREATMENT			
SEWERS			
STEAM			
* Solids Transport	124 Tons	5.00	620
TOTAL		\$	\$1194

\* Solids accumulated at Plant Site

AR 66-915-1      \$45,000 (Pump)  
Estimate      \$290,000 (Treat and filter)  
5/17/68

Inv. Total      \$335,000

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LABOR AT \$6000/vr/man	\$ 4500	\$ 0.695
SALARIES 25%	1125	0.174
LABOR & SALARY 3.47/30%	2447	0.378
UTILITIES	40	0.006
UTILITIES	1194	0.184
QUALITY CONTROL	1000	0.154
REPAIRS & MAINTENANCE 5.25%	1465	0.226
OTHER CONTROLLABLE	180	0.028
TOTAL CONTROLLABLE	\$1,951	\$ 1.845
DEPRECIATION 11 YR.	2540	0.392
PROP. D.M. @ \$1.50/sqft	504	0.077
SHUTDOWN RESERVE		
TOTAL ASSIGNED	\$ 3044	\$ 0.469
PRODUCTION DEVEL.		
TOTAL NON-RECURRING	\$	\$
Below Line	14,995	2.314
TOTAL COST TO INVEST	\$20,553	\$ 3.179